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PROVISIONAL INTELLIGENCE REPORT

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TALLINN NAVAL SHIPYARD (MORSKOY ZAVOD) IN TALLINN, ESTONIAN SSR

CIA/RR PR-120
15 August 1955

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PROVISIONAL INTELLIGENCE REPORT

TALLINN NAVAL SHIPYARD (MORSKOY ZAVOD) IN TALLINN, ESTONIAN SSR

CIA/RR PR-120

(ORR Project 35.508)

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FOREWORD

This report on the Tallinn Naval Shipyard (Morskoy Zavod) is one of a series of Soviet shipyard studies made in an effort better to assess the capabilities of the Soviet shipbuilding and ship-repair industry.

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CIA/RR PR-120
(ORR Project 35.508)

S-E-C-R-E-T

TALLINN NAVAL SHIPYARD (MORSKOY ZAVOD) IN TALLINN, ESTONIAN SSR*

Summary and Conclusions

The Tallinn Naval Shipyard (Morskoy Zavod), in Tallinn, Estonian SSR, is an important ship-repair and maintenance yard for small naval vessels of the Soviet North Baltic Fleet.

The main function of the shipyard is the repair and maintenance of subchasers, coastal minesweepers, motor torpedo boats, and the like. The shipyard, however, is capable of producing annually about 2,500 standard displacement tons (SDT)** of naval construction. This is equivalent to 10 Artillerist-class subchasers. The location of the shipyard at the mouth of the Gulf of Finland and the development of shipyards elsewhere in the USSR and the European Satellites for the construction of naval and merchant vessels, together with the belief that the administration of the shipyard is under the direct control of the Soviet Navy, makes the shipyard an unlikely site for the construction of new vessels.

The shipyard has about 1,000 feet of quay berthing space and about 1,500 linear feet of cradle rails under overhead craneways, which if used together permit simultaneous repair of 22 subchasers of the Artillerist class.

* The estimates and conclusions contained in this report represent the best judgment of ORR as of 1 July 1955.

** Standard displacement of a surface vessel is the displacement in tons (tonnages are given in long tons -- tons of 2,240 pounds -- throughout this report) of the vessel, complete, fully manned, engined, and equipped ready for sea, including all armament and ammunition, equipment, outfit, provisions and fresh water for crew, miscellaneous stores, and implements of every description that are intended to be carried in war but without fuel or reserve boiler-feed water on board.

Machine, electrical, and hull repair shops have been reconstructed and refitted since World War II to support adequately all repair and maintenance activities. Current employment is estimated at 1,800 persons.

The proximity of the shipyard to the Leningrad-Moscow industrial area adds considerably to the efficiency of the yard because of the availability and the relatively short railroad haul of components.

I. Name and Location.

The Tallinn Naval Shipyard, commonly known as Morskoy Zavod and also known as Peetri or Tallinn West Yard, is situated on the southwestern shore of Tallinna Reid, in the northwestern part of the city of Tallinn, Estonian SSR. The shipyard lies east of but adjacent to New Harbor, which is part of the Tallinn Naval Base. The city of Tallinn (formerly Reval) is located in the Estonian SSR, in Economic Region IIa.* The shipyard is approximately 170 nautical miles by water and 230 miles west of Leningrad by railroad. The plane coordinates are latitude 59°27' N, longitude 24°43' E. 1/** The mean annual temperature is 40° F. Extreme recorded temperatures are 89° F in July and minus 19° F in February. 2/

A Soviet standard-gage railroad line connects the shipyard with the city of Tallinn, 3/ which is an important railroad terminal for railroads which connect the city with Leningrad, the Latvian SSR, and other parts of the USSR. The sea approach to the shipyard from the Gulf of Finland is through open waters. Tides do not affect navigation, and variations up to 4 feet in the water level are caused almost entirely by winds. Ice interferes with navigation from the middle of January to the end of February. Icebreakers, however, usually are able to maintain open channels during the winter. 4/

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* The term region in this report refers to the economic regions defined and numbered on CIA Map 12048.1, 9-51 (First Revision, 7-52), USSR: Economic Regions.

** For serially numbered source references, see Appendix C.

The shipyard extends along the Tallinna Reid about 825 feet and has an inland depth of about 2,000 feet. It covers an area of approximately 1,048,000 square feet, or approximately 24 acres.

II. History.

Morskoy Zavod had its origin during the days of the tsars when Estonia was a province of the Russian Empire. Small vessels were reported to have been built during the period of Estonian independence, and since World War II the shipyard has been used almost exclusively by the Soviet Navy for the maintenance and repair of small naval vessels. 5/

Little damage was done to the shipyard during World War II. Most of the damage was repaired by 1949, and it is estimated that the shipyard was in full operation by 1950. During the postwar years, no expansion was made of the original shipyard, and few improvements were made to the existing facilities. 6/

III. Organization.

The shipyard is engaged principally in the maintenance and repair of small naval vessels, and it probably is subordinate to the Ministry of Defense but under direct control of the Soviet Navy.

IV. Importance.

The city of Tallinn is the capital, the largest city, and the most important economic center and port in the Estonian SSR. Because it lies within the mouth of the Gulf of Finland, the city is well placed to defend the sea approaches to Leningrad. Since World War II the port has become the main advanced base of the North Baltic Fleet. 7/ The operations of this naval base are supported in part by the maintenance and repair facilities of Morskoy Zavod.

V. Buildings and Facilities.

Information on the development of Morskoy Zavod since 1949 is sparse. Most of the damage done during World War II has been repaired. The greatest improvement to existing facilities was the installation of newer or better machinery obtained from US Lend-Lease and from Germany. 8/

Machinery and hull repairs above the waterline can be made on medium-size naval vessels over 175 feet long, at the quays, points* 5, 6, and 7. Machinery and hull repairs, including the underwater portion, can be made on small naval vessels up to the size of the Artillerist-class, and possibly as large as the Kronshtadt-class, subchasers when they are docked under the craneways, point 15. The Kronshtadt-class subchaser is about 190 feet long and has a displacement of about 300 tons, and the Artillerist-class subchaser is about 175 feet long with a displacement of about 290 tons. These smaller vessels can be docked by the aid of the marine railroad, point 8.

There are no graving or floating docks in the shipyard.

Small naval vessels to be docked for repair are hauled out of the water on cradles at point 8. The portal carriage, point 11, is lined up with the rails at point 8. The vessel is then hauled onto the portal carriage, and the whole is moved to line up with one of the six sets of cradle rails, point 14. The vessel then is hauled to a place under the craneway where repair takes place. Launching from the cradle rails is a reversal of the above docking procedure.

Two sets of cradle rails are located under each craneway and each craneway is served by one 5-ton (lifting capacity) bridge crane. 10/

The mobile lifting facilities in 1949, for use in the yard and at the repair quays, were reported to comprise the following: 2 railroad cranes of 6- and 12-ton lifting capacity; 2 truck-mounted cranes, one of which has a lifting capacity of 3 tons; and 1 motor crane of unknown lifting capacity mounted on caterpillar track. Several floating cranes, probably capable of heavy lifts up to 75 tons, are available to the shipyard. 11/

The shipyard shops are well equipped to repair machinery and to manufacture parts not readily obtainable from the industrial area

* The identifying numbers in this section correspond to those found on the chart of the shipyard, inside back cover. The chart of the shipyard, which has been developed from aerial photography and revised in order to agree with other intelligence reports, is believed to present a reasonably accurate picture of the present arrangement and facilities. 9/

around Leningrad and Moscow. The shops at points 28, 44, and 45 are the principal machine shops. In these shops repairs are made on propulsion and auxiliary machinery; electrical motors; generators; controllers; and other electrical equipment, possibly including electronic gear. Parts manufacture has been reported in several shops; the shop at point 18 has a small nonferrous foundry for the casting of small parts and bearings. The shop at point 28, in addition to having a number of lathes, milling machines, and the like, has a facing lathe with a face plate of 6 - 1/2 feet (2 meters), a gear-cutting machine, and a bevel-gear planer of unknown size. The shop at point 44 is the principal diesel engine (main propulsion) and motor-driven electrical generator repair shop. The shop is equipped with test stands for main diesel engines and generating equipment and with armature rewinding machines. 12/

The shop at point 26 is the principal steel fabrication and assembly shop. It is equipped with facilities for the bending, planing, and drilling of steel plates and shapes; a sheet metal shop fitted with the usual forming presses, power cutting shears, and welding equipment; and a small forge and foundry. The foundry has a small cupola furnace used chiefly in the production of small gray-iron castings. Ship propellers are machined and balanced in this shop. These are probably small propellers of a size not larger than required for the Artillerist-class subchasers. Part of the shop has two floors. In one section of the second floor there is a shop under the control of the Electric Marine Trust (Elektromortrest -- EMT) engaged in the manufacture of switchboards, instrument panels, and the like. The EMT is reported to be a branch of an organization in Leningrad. 13/

Intrayard transportation is by railroad and truck. The railroad within the shipyard and connecting with the classification yard in Tallinn is Soviet standard gage. 14/

The shipyard is protected on the land side by a fence about 8 feet high. All entrances are guarded by armed guards, and entrance is by pass only. 15/

VI. Production, Repair, and Maintenance.

The shipyard probably was not equipped for full production until about 1950. Between 1946 and mid-1949, repair work was carried out

on motor torpedo boats, minesweepers, a few submarines, and other miscellaneous naval craft. 16/

Late 1949 was the period of the last report of production. It is estimated, however, that the yard has been in full operation since 1950, engaging principally in major overhaul, and possibly modernization, of subchasers, small minesweepers, and other miscellaneous naval craft.

Shop production, however, is believed to be confined largely to rebuilding worn or damaged parts of vessels and assembling new components for replacement. Because of the comparatively good machine shop facilities, it is probable that work is done for other shipyards in the Tallinn area.

VII. Technical Force and Labor.

The shipyard has a small technical force that probably comprises 30 engineers and draftsmen. 17/ On the assumption that Morskoy Zavod is engaged in maintenance and repair work only, it is estimated that the current total employment is 1,800 persons, of which 25 percent is administrative, technical, clerical, and the like, and 75 percent is direct labor. The shipyard probably follows the practice of other shipyards in the USSR and operates on one principal 8-hour shift, with certain shops and possibly some vessel repair of high priority working additional shifts.

VIII. Sources of Power and Material.

Adequate sources of supply for machinery, electrical and electronic equipment, and iron and steel are available to the shipyard in the Leningrad-Moscow-Ukraine industrial area. Data indicating the amount of raw, semifinished, or finished material received by the shipyard are not available. The principal source of electric power is the 50,000-kilowatt (kw) Tallinn Thermal Power Plant. A small 450-kw generator is located within the shipyard. 18/

IX. Capabilities and Vulnerabilities.

A. Capabilities.

Morskoy Zavod has the following: adequate quays; marine railroad facilities; and supporting machine, electrical, and hull-fabrication shops. With these, it is capable of repairing and modernizing hulls, machinery, electrical equipment, and possibly electronic equipment on naval vessels of Kronshtadt-class (190-foot-long subchaser) size and smaller.

Simultaneous repair may be undertaken on 22 subchasers. Ten may be handled at the quays at points 5, 6, and 7; and 12 may be handled on cradles docked under the craneways at point 14.

Although no new construction of vessels has been reported since World War II, the shipyard is capable of the construction of small vessels. Among the present facilities the limiting factor appears to be the weight and length of vessel that can be handled by the portal carriage at point 11. This carriage, which is about 255 feet long, probably can handle vessels up to 300 tons. Limitations on the rate of construction are set by the single 5-ton bridge crane over each craneway, which serves 2 sets of cradle rails, and the limited facilities in the hull-fabrication shop at point 26. On the basis of these factors, it is estimated that the shipyard, operating on a single 8-hour labor shift, can produce approximately 2,500 SDT of naval vessels annually. The vessels produced would be Artillerist-class subchasers, small minesweepers, motor torpedo boats, or other similar craft.

New construction of vessels would probably be on the basis that all steel for hulls would be fabricated and assembled within the shipyard from rolled plates and shapes, that all machinery would be assembled and installed, and that all naval ordnance probably would be installed. Machinery; ordnance; and castings and forgings, including propellers and propeller shafts, would be procured from the industrial area of Leningrad, probably from one of the larger shipyards there. New construction, at the rate of 2,500 SDT annually, practically would preclude any repairs under the craneways.

It is believed, however, that the principal future use of the shipyard will be maintenance support of small vessels for the Soviet North Baltic Fleet based at Tallinn and that any future expansion of the shipyard will be in the direction of additional repair facilities or improvements to the existing ones rather than development as a shipbuilding yard because of the following reasons: (1) the proximity of the shipyard to the Baltic area of the Fleet operations as well as to the Fleet's base in Tallinn make it ideally situated for Fleet maintenance support; (2) the apparent trend of the USSR to develop naval shipbuilding facilities within the interior or at least in less vulnerable locations than Tallinn indicates a trend toward sites that can be protected for a longer period of time in case of war; and (3) the fact that the use of the shipyard to build merchant vessels is believed very remote because of the merchant shipbuilding capabilities already in the Baltic region of the Soviet Bloc.

B. Vulnerabilities.

Because the shipyard is located about 230 miles west of Leningrad by railroad and because it has good railroad connections with the Leningrad industrial area, it can safely be assumed that the sources of supply available to the shipbuilding industry in Leningrad will be available to the shipyard. Probably the most critical item in the operation of the shipyard is an adequate supply of skilled labor. The shipyard, operating as an adjunct to the Soviet Navy, however, undoubtedly enjoys a higher priority for the procurement of labor and materials than do repair yards of the merchant and river fleets.

APPENDIX A

METHODOLOGY

This report was compiled chiefly from post-World War II intelligence. The determination of the use to which Morskoy Zavod has been put was derived principally from an analysis of reports by repatriated prisoners of war and to a lesser degree was confirmed by other intelligence reports and digests.

The chart of the shipyard was compiled by using 1944 aerial photography as a base and revising this base to agree with reported development since 1944.

The labor force was estimated by using a factor of 200 square feet per employee and calculating the total area of all buildings, including the area of multiple floors, total area under craneways, and a space of 30 feet along each quay. This method was derived from data obtained from US shipyards and has been found to agree in general with data obtained on shipyards in East Germany and in Czechoslovakia. 19/ It is estimated that the total employment is 1,800, of which 450 (25 percent) is administrative, technical, clerical, and the like, and 1,350 (75 percent) is direct labor.

The estimated rate of construction of new naval vessels was based on an estimated US rate of constructing subchasers -- 2.4 SDT per man-year -- modified to approximately three-fourths of the US rate because of the less efficient operating facilities prevailing in Morskoy Zavod. The use of the estimate of 1,350 personnel for the direct labor force and a rate of production of 1.8 SDT per man-year gives a production rate of approximately 2,500 SDT per year.

APPENDIX B

GAPS IN INTELLIGENCE

Information on Morskoy Zavod since 1949 is sparse. The present use of the shipyard was concluded from trends in the development of facilities and in the use of the shipyard from 1945 to 1949, as shown in reports by repatriated prisoners of war, and from the development of Tallinn as a major naval base. The current major gaps in intelligence are discussed below.

1. Use of the Shipyard.

Information is required on the class and size of vessels repaired, the extent of the repair, and the class and size of the construction of new vessels.

2. Facilities Erected since Mid-1949 and Improvements Made on Existing Facilities.

Information is required on the location, type, and capacity of new lifting equipment; on expansion of the shipyard; on identification of new facilities; and on any special machines installed.

3. Production since Mid-1949.

Data should include number, class, and size of vessels annually repaired; annual production of new vessels; and amount and type of work done in the shipyard other than the repair and construction of ships for consumers outside the shipyard.

4. Employment.

Data should include the availability and competence of labor and the number of personnel in the principal categories -- skilled, semi-skilled, unskilled, administrative, technical, clerical, custodial, and the like.

5. Inputs.

Data should include the amounts of electric power, coal, coke, and fuel oil annually consumed and the source of supply and the quantity of steel plates and shapes, castings and forgings, machinery, and electrical and electronic equipment.

6. Wages and Costs.

Data should include wages paid to shipyard employees, costs of inputs, and sale prices of end objects delivered.

7. Administrative Control.

Information is required on the identification and administration of the Ministry and the subordinate organization having direct control.

APPENDIX C

SOURCE REFERENCES

The compilation of data and the preparation of estimates and conclusions were derived from research in the files of the Industrial Register, the CIA Library, and the Graphics Register.

The documents from the Industrial Register were mainly raw intelligence consisting chiefly of prisoner-of-war reports. The reliability of single reports could be evaluated only on the basis of their contribution to the report as a whole. The composite of selected reports may be given a rating of RR 3 (possibly true).

Publications of IAC agencies and a few intelligence reports and digests prepared by foreign governments have been given a high evaluation, as they represent the considered opinion of experienced observers and analysts.

Evaluations, following the classification entry and designated "Eval.," have the following significance:

Source of Information	Information
Doc. - Documentary	1 - Confirmed by other sources
A - Completely reliable	2 - Probably true
B - Usually reliable	3 - Possibly true
C - Fairly reliable	4 - Doubtful
D - Not usually reliable	5 - Probably false
E - Not reliable	6 - Cannot be judged
F - Cannot be judged	

"Documentary" refers to original documents of foreign governments and organizations; copies or translations of such documents by a staff officer; or information extracted from such documents by a staff officer, all of which may carry the field evaluation "Documentary."

Evaluations not otherwise designated are those appearing on the cited document; those designated "RR" are by the author of this report. No "RR" evaluation is given when the author agrees with the evaluation on the cited document.

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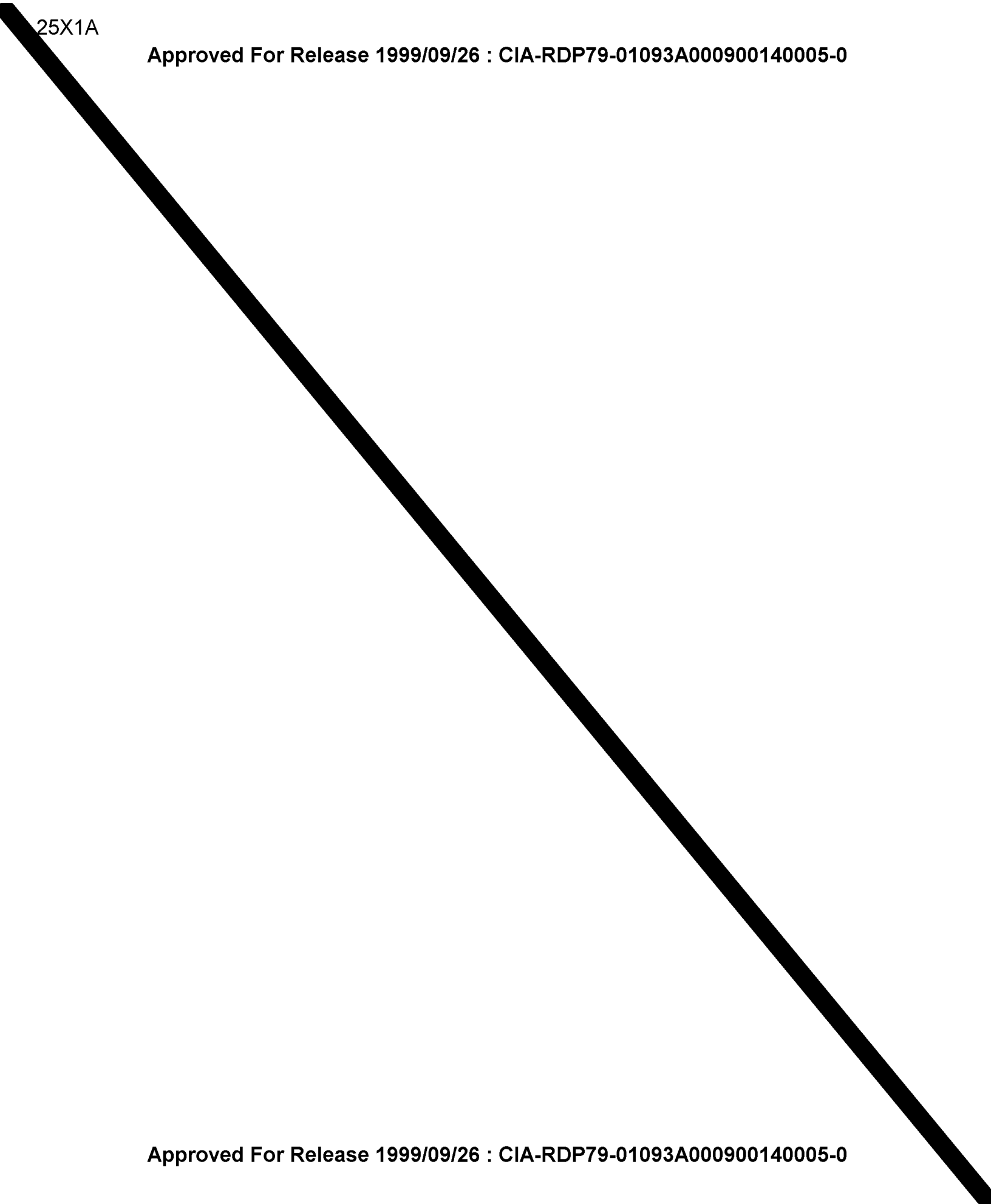

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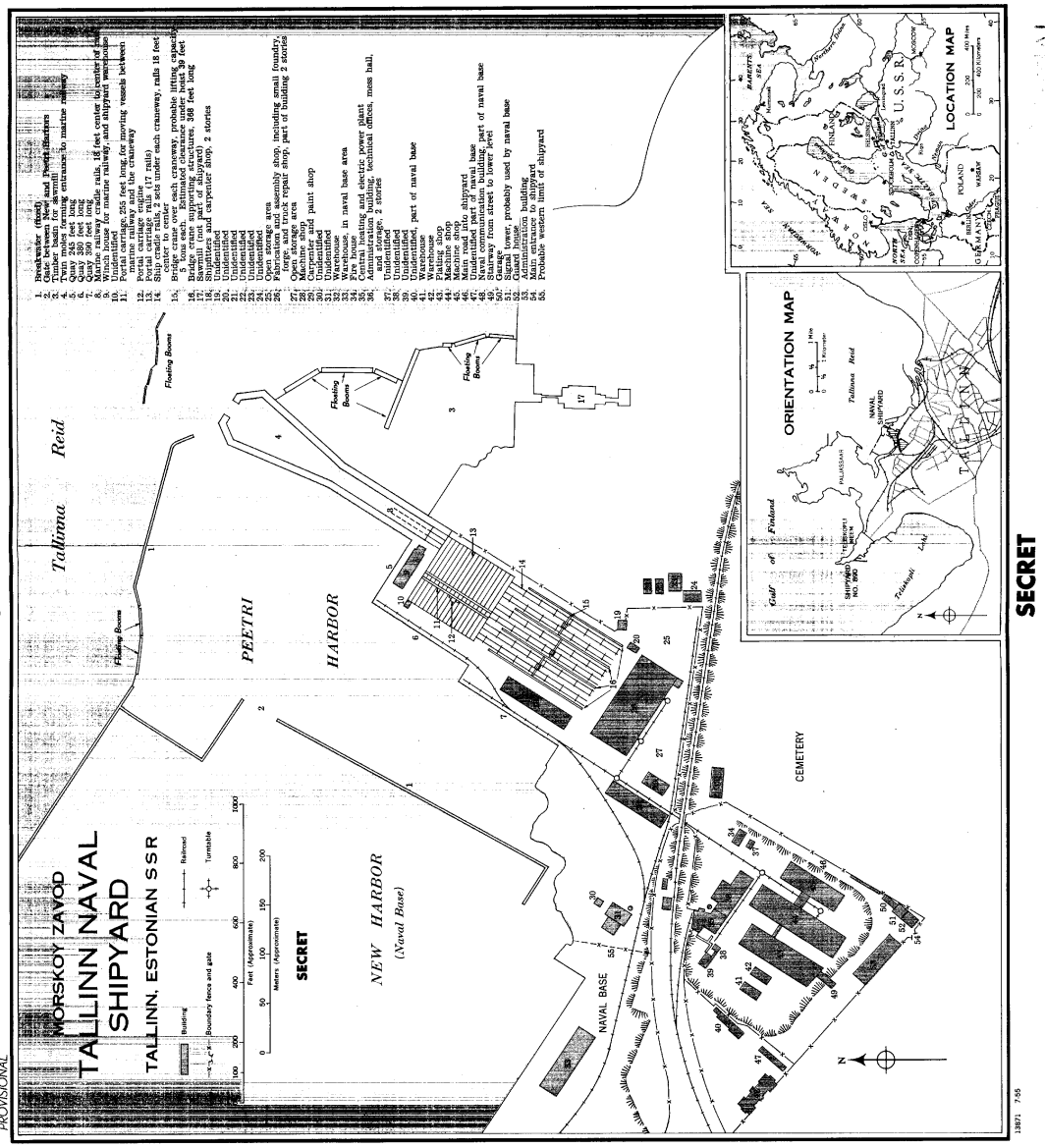

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